

# SEQUENCE LISTING

<110> Castrillon, Diego H

<120> COMPOSITIONS AND METHODS FOR THE IMPROVED DIAGNOSIS OF GERM CELL TUMORS

<130> B0801.70195US00

<140> 09/714,865

<141> 2000-11-16

<150> 60/166,394

<151> 1999-11-18

<160> 47

<170> PatentIn version 3.2

<210> 1

<211> 2224

<212> DNA

<213> Homo sapiens

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 <213> Homo sapiens

<400> 2

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 35 40 45

Ser Arg Arg Asp His Phe Met Lys Ser Gly Phe Ala Ser Gly Arg Asn

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Thr Met Gly Gly Phe Gly Val Gly Lys Ser Phe Gly Asn Arg Gly Phe 85 90 95		
Ser Asn Ser Arg Phe Glu Asp Gly Asp Ser Ser Gly Phe Trp Arg Glu 100 105 110		
Ser Ser Asn Asp Cys Glu Asp Asn Pro Thr Arg Asn Arg Gly Phe Ser 115 120 125		
Lys Arg Gly Gly Tyr Arg Asp Gly Asn Asn Ser Glu Ala Ser Gly Pro 130 135 140		
Tyr Arg Arg Gly Gly Arg Gly Ser Phe Arg Gly Cys Arg Gly Gly Phe 145 150 155 160		
Gly Leu Gly Ser Pro Asn Asn Asp Leu Asp Pro Asp Glu Cys Met Gln 165 170 175		
Arg Thr Gly Gly Leu Phe Gly Ser Arg Arg Pro Val Leu Ser Gly Thr 180 185 190		
Gly Asn Gly Asp Thr Ser Gln Ser Arg Ser Gly Ser Gly Ser Glu Arg 195 200 205		
Gly Gly Tyr Lys Gly Leu Asn Glu Glu Val Ile Thr Gly Ser Gly Lys 210 215 220		
Asn Ser Trp Lys Ser Glu Ala Glu Gly Gly Glu Ser Ser Asp Thr Gln 225 230 235 240		
Gly Pro Lys Val Thr Tyr Ile Pro Pro Pro Pro Pro Glu Asp Glu Asp 245 250 255		
Ser Ile Phe Ala His Tyr Gln Thr Gly Ile Asn Phe Asp Lys Tyr Asp 260 265 270		
Thr Ile Leu Val Glu Val Ser Gly His Asp Ala Pro Pro Ala Ile Leu 275 280 285		
Thr Phe Glu Glu Ala Asn Leu Cys Gln Thr Leu Asn Asn Asn Ile Ala 290 295 300		

Lys Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Ser Ile Pro  
305 310 315 320

Ile Ile Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly Ser  
325 330 335

Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met His  
340 345 350

Asp Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu Cys  
355 360 365

Ile Ile Val Ala Pro Thr Arg Glu Leu Val Asn Gln Ile Tyr Leu Glu  
370 375 380

Ala Arg Lys Phe Ser Phe Gly Thr Cys Val Arg Ala Val Val Ile Tyr  
385 390 395 400

Gly Gly Thr Gln Leu Gly His Ser Ile Arg Gln Ile Val Gln Gly Cys  
405 410 415

Asn Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly Lys  
420 425 430

Glu Lys Ile Gly Leu Lys Gln Ile Lys Tyr Leu Val Leu Asp Glu Ala  
435 440 445

Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu Ile  
450 455 460

Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Met Phe  
465 470 475 480

Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Ala Glu Phe Leu  
485 490 495

Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala Cys  
500 505 510

Arg Asp Val Gln Gln Thr Val Leu Gln Val Gly Gln Phe Ser Lys Arg  
515 520 525

Glu Lys Leu Val Glu Ile Leu Arg Asn Ile Gly Asp Glu Arg Thr Met  
530 535 540

Val Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Thr Ala Thr Phe Leu  
545 550 555 560

Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His Gly Asp Arg Glu Gln  
565 570 575

Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Phe Gly Lys Cys Pro  
580 585 590

Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu Asn  
595 600 605

Val Gln His Val Ile Asn Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr  
610 615 620

Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala  
625 630 635 640

Ile Ser Phe Phe Asp Leu Glu Ser Asp Asn His Leu Ala Gln Pro Leu  
645 650 655

Val Lys Val Leu Thr Asp Ala Gln Gln Asp Val Pro Ala Trp Leu Glu  
660 665 670

Glu Ile Ala Phe Ser Thr Tyr Ile Pro Gly Phe Ser Gly Ser Thr Arg  
675 680 685

Gly Asn Val Phe Ala Ser Val Asp Thr Arg Lys Gly Lys Ser Thr Leu  
690 695 700

Asn Thr Ala Gly Phe Ser Ser Arg Ala Pro Asn Pro Val Asp Asp  
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Glu Ser Trp Asp

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 35 40 45

Pro Ser Gly Arg Asp Asp Phe Met Arg Ser Gly Phe Pro Ser Gly Arg  
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Ser Leu Gly Ser Arg Asp Ile Gly Glu Ser Ser Lys Lys Glu Asn Thr  
 65 70 75 80

Ser Thr Thr Gly Gly Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg Gly  
 85 90 95

Phe Leu Asn Asn Lys Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp Lys  
 100 105 110

Glu Ser Asn Asn Asp Cys Glu Asp Asn Gln Thr Arg Ser Arg Gly Phe  
 115 120 125

Ser Lys Arg Gly Gly Cys Gln Asp Gly Asn Asp Ser Glu Ala Ser Gly  
 130 135 140

Pro Phe Arg Arg Gly Gly Arg Gly Ser Phe Arg Gly Cys Arg Gly Gly  
 145 150 155 160

Phe Gly Leu Gly Arg Pro Asn Ser Glu Ser Asp Gln Asp Gln Gly Thr  
 165 170 175

Gln Cys Gly Gly Gly Phe Leu Val Leu Gly Lys Pro Ala Ala Ser Asp  
 180 185 190

Ser Gly Asn Gly Asp Thr Tyr Gln Ser Arg Ser Gly Ser Gly Arg Gly  
 195 200 205

Gly Tyr Lys Gly Leu Asn Glu Glu Val Val Thr Gly Ser Gly Lys Asn  
 210 215 220

Ser Trp Lys Ser Glu Thr Glu Gly Gly Glu Ser Ser Asp Ser Gln Gly  
 225 230 235 240

Pro Lys Val Thr Tyr Ile Pro Pro Pro Pro Pro Glu Asp Glu Asp Ser  
 245 250 255

Ile Phe Ala His Tyr Gln Thr Gly Ile Asn Phe Asp Lys Tyr Asp Thr  
 260 265 270

Ile Leu Val Glu Val Ser Gly His Asp Ala Pro Pro Ala Ile Leu Thr  
275 280 285

Phe Glu Glu Ala Asn Leu Cys Gln Thr Leu Asn Asn Asn Ile Arg Lys  
290 295 300

Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Thr Ile Pro Ile  
305 310 315 320

Val Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly  
325 330 335

Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met Arg Asp  
340 345 350

Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu Cys Ile  
355 360 365

Ile Val Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr Leu Glu Ala  
370 375 380

Arg Lys Phe Ser Phe Gly Thr Cys Val Ile Ser Val Val Ile Tyr Gly  
385 390 395 400

Gly Thr Gln Phe Gly His Ser Val Arg Gln Ile Val Gln Gly Cys Asn  
405 410 415

Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly Lys Glu  
420 425 430

Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu Ala Asp  
435 440 445

Ser Met Leu Asp Met Gly Phe Ala Pro Glu Ile Lys Lys Leu Ile Ser  
450 455 460

Cys Pro Gly Met Pro Ser Lys Glu Gln His Gln Thr Leu Leu Phe Ser  
465 470 475 480

Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Gly Asp Phe Leu Lys  
485 490 495

Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala Cys Arg  
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Asp Val Gln Gln Thr Ile Leu Gln Val Gly Gln Tyr Gln Lys Glu Lys  
515 520 525

Ser Leu Leu Arg Phe Tyr Glu Asn Ile Gly Asp Glu Arg Thr Met Val  
530 535 540

Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Ile Ala Thr Phe Leu Cys  
545 550 555 560

Gln Glu Lys Ile Ser Ser Thr Ser Ile His Gly Asp Arg Glu Gln Arg  
565 570 575

Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys Pro Val  
580 585 590

Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu Asn Val  
595 600 605

Gln His Val Ile Asn Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr Val  
610 615 620

His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala Ile  
625 630 635 640

Ser Phe Phe Asp Thr Asp Ser Asp Asn His Leu Ala Gln Pro Leu Val  
645 650 655

Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu Glu Glu  
660 665 670

Ile Ala Phe Ser Thr Tyr Val Pro Pro Ser Phe Ser Ser Ser Thr Arg  
675 680 685

Gly Gly Ala Val Phe Ala Ser Val Asp Thr Arg Lys Asn Tyr Gln Gly  
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Lys Ala His Val Glu Tyr Ser Gly Asp Phe Phe Phe Thr Ser Ser Gln  
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Ser Ser

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<211> 713

<212> PRT

<213> Rattus norvegicus



<400> 4

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35 40 45

Gly Pro Ser Gly Arg Asp His Phe Met Arg Ser Gly Phe Ser Ser Gly  
50 55 60

Arg Asn Leu Gly Asn Arg Asp Ile Gly Glu Ser Ser Lys Arg Glu Thr  
65 70 75 80

Thr Ser Thr Thr Gly Gly Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg  
85 90 95

Gly Phe Leu Asn Asn Lys Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp  
100 105 110

Lys Glu Ser Thr Asn Asp Cys Glu Asp Thr Gln Thr Arg Ser Arg Gly  
115 120 125

Phe Ser Lys Arg Gly Gly Tyr Pro Asp Gly Asn Asp Ser Glu Ala Ser  
130 135 140

Gly Pro Phe Arg Arg Gly Gly Arg Asp Ser Glu Tyr Asp Gln Asp Gln  
145 150 155 160

Gly Ser Gln Arg Gly Gly Gly Leu Phe Gly Ser Arg Lys Pro Ala Ala  
165 170 175

Ser Asp Ser Gly Ser Gly Asp Thr Phe Gln Ser Arg Ser Gly Asn Ala  
180 185 190

Arg Gly Ala Tyr Lys Gly Leu Asn Glu Glu Val Val Thr Gly Ser Gly  
195 200 205

Lys Asn Ser Trp Lys Ser Glu Ala Glu Gly Gly Glu Ser Ser Asp Ile  
210 215 220

Gln Gly Pro Lys Val Thr Tyr Ile Pro Pro Pro Pro Pro Glu Asp Glu  
225 230 235 240

Asp Ser Ile Phe Ala His Tyr Gln Thr Gly Ile Asn Phe Asp Lys Tyr  
245 250 255

Asp Thr Ile Leu Val Glu Val Ser Gly His Asp Ala Pro Pro Ala Ile  
260 265 270

Leu Thr Phe Glu Glu Ala Asn Leu Cys Gln Thr Leu Asn Asn Asn Ile  
275 280 285

Ala Lys Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Ser Ile  
290 295 300

Pro Ile Val Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly  
305 310 315 320

Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met  
325 330 335

Arg Asp Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu  
340 345 350

Cys Ile Ile Val Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr Leu  
355 360 365

Glu Ala Arg Lys Phe Ser Phe Gly Thr Cys Val Arg Ala Val Val Ile  
370 375 380

Tyr Gly Gly Thr Gln Phe Gly His Ser Ile Arg Gln Ile Val Gln Gly  
385 390 395 400

Cys Asn Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly  
405 410 415

Lys Glu Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu  
420 425 430

Ala Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu  
435 440 445

Ile Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Leu  
450 455 460

Phe Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Gly Glu Phe  
465 470 475 480

Leu Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala  
485 490 495

Cys Arg Asp Val Gln Gln Ser Ile Leu Gln Val Gly Pro Val Phe Lys  
500 505 510

Lys Arg Lys Leu Val Glu Ile Leu Arg Asn Ile Gly Asp Glu Arg Pro  
515 520 525

Met Val Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Ile Ala Thr Phe  
530 535 540

Leu Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His Gly Asp Arg Glu  
545 550 555 560

Gln Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys  
565 570 575

Pro Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu  
580 585 590

Asn Val Gln His Val Ile Asn Phe Asn Leu Pro Ser Thr Ile Asp Glu  
595 600 605

Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg  
610 615 620

Ala Ile Ser Phe Phe Asp Thr Glu Ser Asp Asn His Leu Ala Gln Pro  
625 630 635 640

Leu Val Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu  
645 650 655

Glu Glu Ile Ala Phe Ser Ser Tyr Ala Pro Pro Ser Phe Ser Asn Ser  
660 665 670

Thr Arg Gly Ala Val Phe Ala Ser Phe Asp Thr Arg Lys Asn Phe Gln  
675 680 685

Gly Lys Asn Thr Leu Asn Thr Ala Gly Ile Ser Ser Ala Gln Ala Pro  
690 695 700

Asn Pro Val Asp Asp Glu Ser Trp Asp  
705 710

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<211> 700  
<212> PRT  
<213> *Xenopus laevis*

<400> 5

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35 40 45

Ser Phe Gly Asn Arg Gly Gly Tyr Arg Ser Glu Arg Ser Arg Pro Ser  
50 55 60

Asn Phe Asn Arg Gly Ser Arg Thr Glu Arg Gly Arg Gly Arg Gly Phe  
65 70 75 80

Gly Thr Asn Arg Asn Asp Asn Tyr Ser Ser Glu Arg Asp Val Phe Gly  
85 90 95

Asp Asp Glu Arg Asp Gln Arg Arg Gly Phe Pro Gly Arg Gly Gly Tyr  
100 105 110

Asn Gly Asn Glu Asp Gly Gln Lys Pro Asn Ala Phe Arg Gly Arg Gly  
115 120 125

Gly Phe Arg Asn Glu Asn Glu Gln Arg Arg Gly Phe Gly Glu Arg Gly  
130 135 140

Gly Phe Arg Ser Glu Asn Gly Gln Arg Asn Phe Asp Asn Arg Gly Asp  
145 150 155 160

Phe Gly Asn Ser Gly Glu Glu Glu Asp Arg Pro Arg Ser Tyr Gly Arg  
165 170 175

Gly Gly Phe Asn Asn Ser Asp Thr Gly Gly Arg Gly Arg Arg Gly Gly  
180 185 190

Arg Gly Gly Gly Ser Gln Tyr Gly Gly Tyr Lys Gly Arg Asn Glu Glu  
195 200 205

Val Gly Val Glu Ser Gly Lys Ser Gln Glu Glu Gly Asn Glu Lys Asp  
210 215 220

Glu Lys Pro Lys Lys Val Thr Tyr Ile Pro Pro Pro Pro Asp Gly  
225 230 235 240

Glu Asp Asn Ile Phe Arg Gln Tyr Gln Ser Gly Ile Asn Phe Asp Lys  
245 250 255

Tyr Asp Glu Ile Leu Val Asp Val Thr Gly Lys Asp Val Pro Pro Ala  
260 265 270

Ile Leu Thr Phe Glu Glu Ala Asn Leu Cys Glu Thr Leu Arg Arg Asn  
275 280 285

Val Ala Arg Ala Gly Tyr Val Lys Leu Thr Pro Val Gln Lys His Ser  
290 295 300

Ile Pro Ile Ile Met Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr  
305 310 315 320

Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser Tyr Met  
325 330 335

Met Asn Glu Gly Ile Thr Ala Ser Gln Tyr Leu Gln Leu Gln Glu Pro  
340 345 350

Glu Ala Ile Ile Ile Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr  
355 360 365

Leu Asp Ala Arg Lys Phe Ser Tyr Gly Thr Cys Val Arg Pro Val Val  
370 375 380

Val Tyr Gly Gly Ile Gln Pro Val His Ala Met Arg Asp Val Glu Lys  
385 390 395 400

Gly Cys Asn Ile Leu Cys Ala Thr Pro Gly Arg Leu Leu Asp Ile Val  
405 410 415

Ser Lys Glu Lys Ile Gly Leu Ser Lys Leu Arg Tyr Leu Val Leu Asp  
420 425 430

Glu Ala Asp Arg Met Leu Asp Met Gly Phe Ala Pro Glu Ile Glu Lys  
435 440 445

Leu Met Thr Lys Pro Gly Met Pro Thr Lys Glu Lys Arg Gln Thr Leu  
450 455 460

Met Phe Ser Ala Thr Tyr Pro Glu Glu Ile Arg Arg Leu Ala Ser Asn  
465 470 475 480

Tyr Leu Lys Ser Glu His Leu Phe Val Val Val Gly Leu Val Gly Gly  
485 490 495

Ala Cys Ser Asp Val Ala Gln Thr Val Leu Glu Met Arg Glu Asn Gly  
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515 520 525

Thr Met Ile Phe Val Asn Thr Lys Lys Lys Ala Asp Phe Ile Ala Gly  
530 535 540

Tyr Leu Cys Gln Glu Lys Phe Ser Ser Thr Ser Ile His Gly Asp Arg  
545 550 555 560

Glu Gln Tyr Gln Arg Glu Ser Ala Leu Trp Asp Phe Arg Thr Gly Lys  
565 570 575

Cys Thr Val Ile Val Cys Thr Ala Val Ala Ala Arg Gly Leu Asp Ile  
580 585 590

Glu Asn Val Gln His Val Ile Asn Tyr Asp Val Pro Lys Glu Val Asp  
595 600 605

Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly  
610 615 620

Lys Ala Thr Ser Phe Phe Asn Val Gln Asp Asp His Val Ile Ala Arg  
625 630 635 640

Pro Leu Val Lys Ile Leu Thr Asp Ala His Gln Glu Val Pro Ala Trp  
645 650 655

Leu Glu Glu Ile Ala Phe Gly Gly His Gly Ala Leu Asn Ser Phe Tyr  
660 665 670

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Pro Ser Phe Ala Gln Glu Glu Glu Ala Ser Trp Asp  
690 695 700

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<212> PRT  
<213> Danio reio

<400> 6

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Gly Ser Ser Trp Lys Met Thr Gly Asp Ser Phe Arg Gly Arg Gly Gly  
35 40 45

Arg Gly Gly Ser Arg Gly Gly Arg Gly Gly Phe Ser Gly Phe Lys Ser  
50 55 60

Glu Ile Asp Glu Asn Gly Ser Asp Gly Gly Trp Asn Gly Gly Glu Ser  
65 70 75 80

Arg Gly Arg Gly Arg Gly Gly Phe Arg Gly Gly Phe Arg Ser Gly Ser  
85 90 95

Arg Asp Glu Asn Asp Glu Asn Gly Asn Asp Asp Gly Trp Lys Gly Gly  
100 105 110

Glu Ser Arg Gly Arg Gly Arg Gly Gly Phe Gly Gly Gly Phe Arg Gly  
115 120 125

Gly Phe Arg Asp Gly Gly Asn Glu Asp Thr Gly Arg Arg Gly Phe Gly  
130 135 140

Arg Glu Asn Asn Glu Asn Gly Asn Asp Glu Gly Gly Glu Gly Arg Gly  
145 150 155 160

Arg Gly Arg Gly Gly Phe Arg Gly Gly Phe Arg Asp Gly Gly Gly Asp  
165 170 175

Glu Ser Gly Lys Arg Gly Phe Gly Arg Gly Gly Phe Arg Gly Arg Asn  
180 185 190

Glu Glu Val Phe Ser Lys Val Thr Thr Ala Asp Lys Leu Asp Gln Glu  
195 200 205

Gly Ser Glu Asn Ala Gly Pro Lys Val Val Tyr Val Pro Pro Pro Pro  
210 215 220

Pro Glu Glu Glu Ser Ser Ile Phe Ser His Tyr Ala Thr Gly Ile Asn  
225 230 235 240

Phe Asp Lys Tyr Asp Asp Ile Leu Val Asp Val Ser Gly Ser Asn Pro  
245 250 255

Pro Lys Ala Ile Met Thr Phe Glu Glu Ala Gly Leu Cys Asp Ser Leu  
260 265 270

Ser Lys Asn Val Ser Lys Ser Gly Tyr Val Lys Pro Thr Pro Val Gln  
275 280 285

Lys His Gly Ile Pro Ile Ile Ser Ala Gly Arg Asp Leu Met Ala Cys  
290 295 300

Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu  
305 310 315 320

Gln Arg Phe Met Thr Asp Gly Val Ala Ala Ser Lys Phe Ser Glu Ile  
325 330 335

Gln Glu Pro Glu Ala Ile Ile Val Ala Pro Thr Arg Glu Leu Ile Asn  
340 345 350

Gln Ile Tyr Leu Glu Ala Arg Lys Phe Ala Tyr Gly Thr Cys Val Arg  
355 360 365

Pro Val Val Val Tyr Gly Gly Ile Asn Thr Gly Tyr Thr Ile Arg Glu  
370 375 380

Val Leu Lys Gly Cys Asn Val Leu Cys Ala Thr Pro Gly Arg Leu His  
385 390 395 400

Asp Leu Ile Gly Arg Gly Lys Ile Gly Leu Ser Lys Val Arg Tyr Leu  
405 410 415

Val Leu Asp Glu Ala Asp Arg Met Leu Asp Met Gly Phe Glu Pro Glu  
420 425 430

Met Arg Lys Leu Val Ala Ser Pro Gly Met Pro Ser Lys Glu Lys Arg  
435 440 445

Gln Thr Leu Met Phe Ser Ala Thr Tyr Pro Glu Asp Ile Gln Arg Met  
450 455 460



Ala Ala Asp Phe Leu Lys Val Asp Tyr Ile Phe Leu Ala Val Gly Val  
465 470 475 480

Val Gly Gly Ala Cys Ser Asp Val Glu Gln Thr Ile Val Gln Val Asp  
485 490 495

Gln Tyr Ser Lys Arg Asp Gln Leu Leu Glu Leu Leu Arg Ala Thr Gly  
500 505 510

Asn Glu Arg Thr Met Val Phe Val Glu Thr Lys Arg Ser Ala Asp Phe  
515 520 525

Ile Ala Thr Phe Leu Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His  
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Gly Asp Arg Glu Gln Arg Glu Arg Glu Lys Ala Leu Ser Asp Phe Arg  
545 550 555 560

Leu Gly His Cys Pro Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly  
565 570 575

Leu Asp Ile Glu Gln Val Gln His Val Val Asn Phe Asp Met Pro Ser  
580 585 590

Ser Ile Asp Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly  
595 600 605

Asn Thr Gly Arg Ala Val Ser Phe Phe Asn Pro Glu Ser Asp Thr Pro  
610 615 620

Leu Ala Arg Ser Leu Val Lys Val Leu Ser Gly Ala Gln Gln Val Val  
625 630 635 640

Pro Lys Trp Leu Glu Glu Val Ala Phe Ser Ala His Gly Thr Thr Gly  
645 650 655

Phe Asn Pro Arg Gly Lys Val Phe Ala Ser Thr Asp Ser Arg Lys Gly  
660 665 670

Gly Ser Phe Lys Ser Asp Glu Pro Pro Pro Ser Gln Thr Ser Ala Pro  
675 680 685

Ser Ala Ala Ala Ala Ala Asp Asp Glu Glu Trp Glu  
690 695 700

<210> 7  
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<213> *Drosophila melanogaster*

<400> 7

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Gly Glu Ala Glu Gly Asp Gly Val Gly Gly Ser Gly Gly Glu Gly Gly  
35 40 45

Gly Tyr Gln Gly Gly Asn Arg Asp Val Phe Gly Arg Ile Gly Gly Gly  
50 55 60

Arg Gly Gly Gly Ala Gly Gly Tyr Arg Gly Gly Asn Arg Asp Gly Gly  
65 70 75 80

Gly Phe His Gly Gly Arg Arg Glu Gly Glu Arg Asp Phe Arg Gly Gly  
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100 105 110

Gly Ser Arg Gly Gly Gln Gly Gly Phe Arg Gly Gly Glu Gly Gly Phe  
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Leu Asp Arg Glu Glu Arg Gly Gly Glu Arg Arg Gly Arg Leu Asp Arg  
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Glu Glu Arg Gly Gly Glu Arg Gly Glu Arg Gly Asp Gly Gly Phe Ala  
165 170 175

Arg Arg Arg Arg Asn Glu Asp Asp Ile Asn Asn Asn Asn Asn Ile Ala  
180 185 190

Glu Asp Val Glu Arg Lys Arg Glu Phe Tyr Ile Pro Pro Glu Pro Ser  
195 200 205

Asn Asp Ala Ile Glu Ile Phe Ser Ser Gly Ile Ala Ser Gly Ile His  
210 215 220

Phe Ser Lys Tyr Asn Asn Ile Pro Val Lys Val Thr Gly Ser Asp Val  
225 230 235 240

Pro Gln Pro Ile Gln His Phe Thr Ser Ala Asp Leu Arg Asp Ile Ile  
245 250 255

Ile Asp Asn Val Asn Lys Ser Gly Phe Lys Ile Pro Thr Pro Ile Gln  
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Lys Cys Ser Ile Pro Val Ile Ser Ser Gly Arg Asp Leu Met Ala Cys  
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Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu  
290 295 300

Ser Lys Leu Leu Glu Asp Pro His Glu Leu Glu Leu Gly Arg Pro Gln  
305 310 315 320

Val Val Ile Val Ser Pro Thr Arg Glu Leu Ala Ile Gln Ile Phe Asn  
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Glu Ala Arg Lys Phe Ala Phe Glu Ser Tyr Leu Lys Ile Gly Ile Val  
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Tyr Gly Gly Thr Ser Phe Arg His Gln Asn Glu Cys Ile Thr Arg Gly  
355 360 365

Cys His Val Val Ile Ala Thr Pro Gly Arg Leu Leu Asp Phe Val Asp  
370 375 380

Arg Thr Phe Ile Thr Phe Glu Asp Thr Arg Phe Val Val Leu Asp Glu  
385 390 395 400

Ala Asp Arg Met Leu Asp Met Gly Phe Ser Glu Asp Met Arg Arg Ile  
405 410 415

Met Thr His Val Thr Met Arg Pro Glu His Gln Thr Leu Met Phe Ser  
420 425 430

Ala Thr Phe Pro Glu Glu Ile Gln Arg Met Ala Gly Glu Phe Leu Lys  
435 440 445

Asn Tyr Val Ser Val Ala Ile Gly Ile Val Gly Gly Ala Cys Ser Asp  
450 455 460

Val Lys Gln Thr Ile Tyr Glu Val Asn Lys Tyr Ala Lys Arg Ser Lys  
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Leu Ile Glu Ile Leu Ser Glu Gln Ala Asp Gly Thr Ile Val Phe Val  
485 490 495

Glu Thr Lys Arg Gly Ala Asp Phe Leu Ala Ser Phe Leu Ser Glu Lys  
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Glu Phe Pro Thr Thr Ser Ile His Gly Asp Arg Leu Gln Ser Gln Arg  
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Glu Gln Ala Leu Arg Asp Phe Lys Asn Gly Ser Met Lys Val Leu Ile  
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Ala Thr Ser Val Ala Ser Arg Gly Leu Asp Ile Lys Asn Ile Lys His  
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Val Ile Asn Tyr Asp Met Pro Ser Lys Ile Asp Asp Tyr Val His Arg  
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Ile Gly Arg Thr Gly Cys Val Gly Asn Asn Gly Arg Ala Thr Ser Phe  
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 <213> Danio rerio

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aagtacttgg attacgtacc gcttgtgttt atgggtgggtc aagtataagt gaacaaatag 420  
ccgaattgaa aagaggtgcc gatattgtcg ttgacacacc aggtcgtatg atcgatattt 480  
tatgtgcaaa taatcgacgt atcaccaacc taagacgtgt aacattcttg gtgttggtg 540  
aagccgatcg tatgtttgat atgggttttg gtccacaaat taattgtatc gtcgatagta 600  
ttagaccoga togtcaaacc attatgttct ctgcaacttt tcctccaaaa gttgagaatg 660  
tcgcaaagaa gatcctaaac aaaccattgg aaatcattgc tgggtggtaga agtatagttt 720  
catcagatat tgaacaattt gtagaggtag gtccaaactga aactagattt agacgtttta 780  
tagaattgct atcgatttgg tatcataaag gtcagatttt aatctttacc aatcgtcaag 840  
agaccaccga caatctatat cgtcaacttt caaactctca atatcaatgt ctatcattac 900  
atggtagtaa agatcaaacc gatcgtgatg aaaccattag tgactttaaa aataaggtta 960  
aaaccatttt aatcgtaca ccattggcat cacgtgggtt ggatatcaaa gattttaa atc 1020  
ttgtgggttaa tttcgattgc cctgatcatt tggaagatta tgttcatagg gtaggtagaa 1080  
ctggtagagc aggaaatcgt ggtactgctt atacatttat cacacccgac gaagagagat 1140  
tctcttcgtc aatcattaaa gctttggaac aatctgggtc aaaagtacc gatgaactta 1200

gaaaattgaa tgatacctac gagaaaaaga gaaaagaagg taaggatgta ctattggcac 1260  
 caaccggttt cactggtaga ggtcataaat ttgatgctgc cgaagaggat aaaaagaata 1320  
 ttgaaagaaa acaacaaaga aaagcatatg gtatcgaaga ggaagaagaa gaagaggatg 1380  
 aagataaaga aaaagctgaa aaggagaaat tggccgctgc ttccgctgaa aaagaaaaac 1440  
 aattattatc tgaaaaagaa aaattggatc ctgctaccac taatactatc gtcatacctg 1500  
 gtgtagatgg tacaatcatt acaccttctt cattacttca aacgatcct tcagttcctg 1560  
 tgggtcaaca ggctatcaat caaatatttg gtatttcaca agttacctcc tccgaagaag 1620  
 caattaaaaa acttcaattg gccgctcaat taggtatgaa aggtaatat caaaaattaa 1680  
 ataatcaaat aactccatta aatcaaactc atttcattga agaattagaa attaagtatt 1740  
 cggaattc 1748

<210> 23  
 <211> 661  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 23

Met Ser Asp Asp Trp Asp Asp Glu Pro Ile Val Asp Thr Arg Gly Ala  
 1 5 10 15

Arg Gly Gly Asp Trp Ser Asp Asp Glu Asp Thr Ala Lys Ser Phe Ser  
 20 25 30

Gly Glu Ala Glu Gly Asp Gly Val Gly Gly Ser Gly Gly Glu Gly Gly  
 35 40 45

Gly Tyr Gln Gly Gly Asn Arg Asp Val Phe Gly Arg Ile Gly Gly Gly  
 50 55 60

Arg Gly Gly Gly Ala Gly Gly Tyr Arg Gly Gly Asn Arg Asp Gly Gly  
 65 70 75 80

Gly Phe His Gly Gly Arg Arg Glu Gly Glu Arg Asp Phe Arg Gly Gly  
 85 90 95

Glu Gly Gly Phe Arg Gly Gly Gln Gly Gly Ser Arg Gly Gly Gln Gly  
 100 105 110

Gly Ser Arg Gly Gly Gln Gly Gly Phe Arg Gly Gly Glu Gly Gly Phe  
 115 120 125

Arg Gly Arg Leu Tyr Glu Asn Glu Asp Gly Asp Glu Arg Arg Gly Arg

130

135

140

Leu Asp Arg Glu Glu Arg Gly Gly Glu Arg Arg Gly Arg Leu Asp Arg  
 145 150 155 160

Glu Glu Arg Gly Gly Glu Arg Gly Glu Arg Gly Asp Gly Gly Phe Ala  
 165 170 175

Arg Arg Arg Arg Asn Glu Asp Asp Ile Asn Asn Asn Asn Asn Ile Ala  
 180 185 190

Glu Asp Val Glu Arg Lys Arg Glu Phe Tyr Ile Pro Pro Glu Pro Ser  
 195 200 205

Asn Asp Ala Ile Glu Ile Phe Ser Ser Gly Ile Ala Ser Gly Ile His  
 210 215 220

Phe Ser Lys Tyr Asn Asn Ile Pro Val Lys Val Thr Gly Ser Asp Val  
 225 230 235 240

Pro Gln Pro Ile Gln His Phe Thr Ser Ala Asp Leu Arg Asp Ile Ile  
 245 250 255

Ile Asp Asn Val Asn Lys Ser Gly Phe Lys Ile Pro Thr Pro Ile Gln  
 260 265 270

Lys Cys Ser Ile Pro Val Ile Ser Ser Gly Arg Asp Leu Met Ala Cys  
 275 280 285

Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu  
 290 295 300

Ser Lys Leu Leu Glu Asp Pro His Glu Leu Glu Leu Gly Arg Pro Gln  
 305 310 315 320

Val Val Ile Val Ser Pro Thr Arg Glu Leu Ala Ile Gln Ile Phe Asn  
 325 330 335

Glu Ala Arg Lys Phe Ala Phe Glu Ser Tyr Leu Lys Ile Gly Ile Val  
 340 345 350

Tyr Gly Gly Thr Ser Phe Arg His Gln Asn Glu Cys Ile Thr Arg Gly  
 355 360 365

Cys His Val Val Ile Ala Thr Pro Gly Arg Leu Leu Asp Phe Val Asp  
 370 375 380

Arg Thr Phe Ile Thr Phe Glu Asp Thr Arg Phe Val Val Leu Asp Glu  
385 390 395 400

Ala Asp Arg Met Leu Asp Met Gly Phe Ser Glu Asp Met Arg Arg Ile  
405 410 415

Met Thr His Val Thr Met Arg Pro Glu His Gln Thr Leu Met Phe Ser  
420 425 430

Ala Thr Phe Pro Glu Glu Ile Gln Arg Met Ala Gly Glu Phe Leu Lys  
435 440 445

Asn Tyr Val Ser Val Ala Ile Gly Ile Val Gly Gly Ala Cys Ser Asp  
450 455 460

Val Lys Gln Thr Ile Tyr Glu Val Asn Lys Tyr Ala Lys Arg Ser Lys  
465 470 475 480

Leu Ile Glu Ile Leu Ser Glu Gln Ala Asp Gly Thr Ile Val Phe Val  
485 490 495

Glu Thr Lys Arg Gly Ala Asp Phe Leu Ala Ser Phe Leu Ser Glu Lys  
500 505 510

Glu Phe Pro Thr Thr Ser Ile His Gly Asp Arg Leu Gln Ser Gln Arg  
515 520 525

Glu Gln Ala Leu Arg Asp Phe Lys Asn Gly Ser Met Lys Val Leu Ile  
530 535 540

Ala Thr Ser Val Ala Ser Arg Gly Leu Asp Ile Lys Asn Ile Lys His  
545 550 555 560

Val Ile Asn Tyr Asp Met Pro Ser Lys Ile Asp Asp Tyr Val His Arg  
565 570 575

Ile Gly Arg Thr Gly Cys Val Gly Asn Asn Gly Arg Ala Thr Ser Phe  
580 585 590

Phe Asp Pro Glu Lys Asp Arg Ala Ile Ala Ala Asp Leu Val Lys Ile  
595 600 605

Leu Glu Gly Ser Gly Gln Thr Val Pro Asp Phe Leu Arg Thr Cys Gly  
610 615 620

Ala Gly Gly Asp Gly Gly Tyr Ser Asn Gln Asn Phe Gly Gly Val Asp  
625 630 635 640

Val Arg Gly Arg Gly Asn Tyr Val Gly Asp Ala Thr Asn Val Glu Glu  
645 650 655

Glu Glu Gln Trp Asp  
660

<210> 24  
<211> 713  
<212> PRT  
<213> Rattus norvegicus

<400> 24

Met Gly Asp Glu Asp Trp Glu Ala Glu Ile Leu Lys Pro His Val Ser  
1 5 10 15

Ser Tyr Val Pro Val Phe Glu Lys Asp Lys Tyr Ser Ser Gly Ala Asn  
20 25 30

Gly Asp Thr Phe Asn Arg Thr Ser Ala Ser Ser Ser Glu Met Glu Asp  
35 40 45

Gly Pro Ser Gly Arg Asp His Phe Met Arg Ser Gly Phe Ser Ser Gly  
50 55 60

Arg Asn Leu Gly Asn Arg Asp Ile Gly Glu Ser Ser Lys Arg Glu Thr  
65 70 75 80

Thr Ser Thr Thr Gly Gly Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg  
85 90 95

Gly Phe Leu Asn Asn Lys Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp  
100 105 110

Lys Glu Ser Thr Asn Asp Cys Glu Asp Thr Gln Thr Arg Ser Arg Gly  
115 120 125

Phe Ser Lys Arg Gly Gly Tyr Pro Asp Gly Asn Asp Ser Glu Ala Ser  
130 135 140

Gly Pro Phe Arg Arg Gly Gly Arg Asp Ser Glu Tyr Asp Gln Asp Gln  
145 150 155 160

Gly Ser Gln Arg Gly Gly Gly Leu Phe Gly Ser Arg Lys Pro Ala Ala

165

170

175

Ser Asp Ser Gly Ser Gly Asp Thr Phe Gln Ser Arg Ser Gly Asn Ala  
 180 185 190

Arg Gly Ala Tyr Lys Gly Leu Asn Glu Glu Val Val Thr Gly Ser Gly  
 195 200 205

Lys Asn Ser Trp Lys Ser Glu Ala Glu Gly Gly Glu Ser Ser Asp Ile  
 210 215 220

Gln Gly Pro Lys Val Thr Tyr Ile Pro Pro Pro Pro Pro Glu Asp Glu  
 225 230 235 240

Asp Ser Ile Phe Ala His Tyr Gln Thr Gly Ile Asn Phe Asp Lys Tyr  
 245 250 255

Asp Thr Ile Leu Val Glu Val Ser Gly His Asp Ala Pro Pro Ala Ile  
 260 265 270

Leu Thr Phe Glu Glu Ala Asn Leu Cys Gln Thr Leu Asn Asn Asn Ile  
 275 280 285

Ala Lys Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Ser Ile  
 290 295 300

Pro Ile Val Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly  
 305 310 315 320

Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met  
 325 330 335

Arg Asp Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu  
 340 345 350

Cys Ile Ile Val Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr Leu  
 355 360 365

Glu Ala Arg Lys Phe Ser Phe Gly Thr Cys Val Arg Ala Val Val Ile  
 370 375 380

Tyr Gly Gly Thr Gln Phe Gly His Ser Ile Arg Gln Ile Val Gln Gly  
 385 390 395 400

Cys Asn Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly  
 405 410 415

Lys Glu Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu  
420 425 430

Ala Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu  
435 440 445

Ile Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Leu  
450 455 460

Phe Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Gly Glu Phe  
465 470 475 480

Leu Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala  
485 490 495

Cys Arg Asp Val Gln Gln Ser Ile Leu Gln Val Gly Pro Val Phe Lys  
500 505 510

Lys Arg Lys Leu Val Glu Ile Leu Arg Asn Ile Gly Asp Glu Arg Pro  
515 520 525

Met Val Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Ile Ala Thr Phe  
530 535 540

Leu Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His Gly Asp Arg Glu  
545 550 555 560

Gln Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys  
565 570 575

Pro Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu  
580 585 590

Asn Val Gln His Val Ile Asn Phe Asn Leu Pro Ser Thr Ile Asp Glu  
595 600 605

Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg  
610 615 620

Ala Ile Ser Phe Phe Asp Thr Glu Ser Asp Asn His Leu Ala Gln Pro  
625 630 635 640

Leu Val Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu  
645 650 655



Glu Glu Ile Ala Phe Ser Ser Tyr Ala Pro Pro Ser Phe Ser Asn Ser  
660 665 670

Thr Arg Gly Ala Val Phe Ala Ser Phe Asp Thr Arg Lys Asn Phe Gln  
675 680 685

Gly Lys Asn Thr Leu Asn Thr Ala Gly Ile Ser Ser Ala Gln Ala Pro  
690 695 700

Asn Pro Val Asp Asp Glu Ser Trp Asp  
705 710

<210> 25  
<211> 637  
<212> PRT  
<213> Mus musculus

<400> 25

Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg Gly Phe Leu Asn Asn Lys  
1 5 10 15

Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp Lys Glu Ser Asn Asn Asp  
20 25 30

Cys Glu Asp Asn Gln Thr Arg Ser Arg Gly Phe Ser Lys Arg Gly Gly  
35 40 45

Cys Gln Asp Gly Asn Asp Ser Glu Ala Ser Gly Pro Phe Arg Arg Gly  
50 55 60

Gly Arg Gly Ser Phe Arg Gly Cys Arg Gly Gly Phe Gly Leu Gly Arg  
65 70 75 80

Pro Asn Ser Glu Ser Asp Gln Asp Gln Gly Thr Gln Cys Gly Gly Gly  
85 90 95

Phe Leu Val Leu Gly Lys Pro Ala Ala Ser Asp Ser Gly Asn Gly Asp  
100 105 110

Thr Tyr Gln Ser Arg Ser Gly Ser Gly Arg Gly Gly Tyr Lys Gly Leu  
115 120 125

Asn Glu Glu Val Val Thr Gly Ser Gly Lys Asn Ser Trp Lys Ser Glu  
130 135 140

Thr Glu Gly Gly Glu Ser Ser Asp Ser Gln Gly Pro Lys Val Thr Tyr

145		150		155		160
Ile Pro Pro Pro Pro Pro Glu Asp Glu Asp Ser Ile Phe Ala His Tyr						
	165			170		175
Gln Thr Gly Ile Asn Phe Asp Lys Tyr Asp Thr Ile Leu Val Glu Val						
	180			185		190
Ser Gly His Asp Ala Pro Pro Ala Ile Leu Thr Phe Glu Glu Ala Asn						
	195			200		205
Leu Cys Gln Thr Leu Asn Asn Asn Ile Arg Lys Ala Gly Tyr Thr Lys						
	210			215		220
Leu Thr Pro Val Gln Lys Tyr Thr Ile Pro Ile Val Leu Ala Gly Arg						
	225			230		235
						240
Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe						
				245		250
						255
Leu Leu Pro Ile Leu Ala His Met Met Arg Asp Gly Ile Thr Ala Ser						
	260			265		270
Arg Phe Lys Glu Leu Gln Glu Pro Glu Cys Ile Ile Val Ala Pro Thr						
	275			280		285
Arg Glu Leu Ile Asn Gln Ile Tyr Leu Glu Ala Arg Lys Phe Ser Phe						
	290			295		300
Gly Thr Cys Val Ile Ser Val Val Ile Tyr Gly Gly Thr Gln Phe Gly						
	305			310		315
						320
His Ser Val Arg Gln Ile Val Gln Gly Cys Asn Ile Leu Cys Ala Thr						
				325		330
						335
Pro Gly Arg Leu Met Asp Ile Ile Gly Lys Glu Lys Ile Gly Leu Lys						
	340			345		350
Gln Val Lys Tyr Leu Val Leu Asp Glu Ala Asp Ser Met Leu Asp Met						
	355			360		365
Gly Phe Ala Pro Glu Ile Lys Lys Leu Ile Ser Cys Pro Gly Met Pro						
	370			375		380
Ser Lys Glu Gln His Gln Thr Leu Leu Phe Ser Ala Thr Phe Pro Glu						
	385			390		395
						400

Glu Ile Gln Arg Leu Ala Gly Asp Phe Leu Lys Ser Asn Tyr Leu Phe  
405 410 415

Val Ala Val Gly Gln Val Gly Gly Ala Cys Arg Asp Val Gln Gln Thr  
420 425 430

Ile Leu Gln Val Gly Gln Tyr Gln Lys Glu Lys Ser Leu Leu Arg Phe  
435 440 445

Tyr Glu Asn Ile Gly Asp Glu Arg Thr Met Val Phe Val Glu Thr Lys  
450 455 460

Lys Lys Ala Asp Phe Ile Ala Thr Phe Leu Cys Gln Glu Lys Ile Ser  
465 470 475 480

Ser Thr Ser Ile His Gly Asp Arg Glu Gln Arg Glu Arg Glu Gln Ala  
485 490 495

Leu Gly Asp Phe Arg Cys Gly Lys Cys Pro Val Leu Val Ala Thr Ser  
500 505 510

Val Ala Ala Arg Gly Leu Asp Ile Glu Asn Val Gln His Val Ile Asn  
515 520 525

Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr Val His Arg Ile Gly Arg  
530 535 540

Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala Ile Ser Phe Phe Asp Thr  
545 550 555 560

Asp Ser Asp Asn His Leu Ala Gln Pro Leu Val Lys Val Leu Ser Asp  
565 570 575

Ala Gln Gln Asp Val Pro Ala Trp Leu Glu Glu Ile Ala Phe Ser Thr  
580 585 590

Tyr Val Pro Pro Ser Phe Ser Ser Ser Thr Arg Gly Gly Ala Val Phe  
595 600 605

Ala Ser Val Asp Thr Arg Lys Asn Tyr Gln Gly Lys Ala His Val Glu  
610 615 620

Tyr Ser Gly Asp Phe Phe Phe Thr Ser Ser Gln Ser Ser  
625 630 635

<210> 26  
<211> 662  
<212> PRT  
<213> Mus musculus

<400> 26

Met Ser His Val Ala Val Glu Asn Ala Leu Gly Leu Asp Gln Gln Phe  
1 5 10 15

Ala Gly Leu Asp Leu Asn Ser Ser Asp Asn Gln Ser Gly Gly Ser Thr  
20 25 30

Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Arg Glu Ala  
35 40 45

Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser Gly Trp Ser Ser Ser Lys  
50 55 60

Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Gly Asp Ser Arg Gly  
65 70 75 80

Lys Ser Ser Phe Phe Gly Asp Arg Gly Ser Gly Ser Arg Gly Arg Phe  
85 90 95

Asp Asp Arg Gly Arg Gly Asp Tyr Asp Gly Ile Gly Gly Arg Gly Asp  
100 105 110

Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys  
115 120 125

Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu  
130 135 140

Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe  
145 150 155 160

Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro  
165 170 175

Pro His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met  
180 185 190

Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys  
195 200 205

His Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala

210	215	220
Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser		
225	230	235 240
Gln Ile Tyr Ala Asp Gly Pro Gly Glu Ala Leu Arg Ala Met Lys Glu		
	245	250 255
Asn Gly Arg Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu		
	260	265 270
Ala Pro Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys		
	275	280 285
Phe Ser Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala		
	290	295 300
Glu Ile Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu		
305	310	315 320
Val Ala Thr Pro Gly Arg Leu Val Asp Met Met Glu Arg Gly Lys Ile		
	325	330 335
Gly Leu Asp Phe Cys Lys Tyr Leu Val Leu Asp Glu Ala Asp Arg Met		
	340	345 350
Leu Asp Met Gly Phe Glu Pro Gln Ile Arg Arg Ile Val Glu Gln Asp		
	355	360 365
Thr Met Pro Pro Lys Gly Val Arg His Thr Met Met Phe Ser Ala Thr		
	370	375 380
Phe Pro Lys Glu Ile Gln Met Leu Ala Arg Asp Phe Leu Asp Glu Tyr		
385	390	395 400
Ile Phe Leu Ala Val Gly Arg Val Gly Ser Thr Ser Glu Asn Ile Thr		
	405	410 415
Gln Lys Val Val Trp Val Glu Glu Ile Asp Lys Arg Ser Phe Leu Leu		
	420	425 430
Asp Leu Leu Asn Ala Thr Gly Lys Asp Ser Leu Thr Leu Val Phe Val		
	435	440 445
Glu Thr Lys Lys Gly Ala Asp Ser Leu Glu Asp Phe Leu Tyr His Glu		
450	455	460

Gly Tyr Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg  
465 470 475 480

Glu Glu Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val  
485 490 495

Ala Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His  
500 505 510

Val Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg  
515 520 525

Ile Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe  
530 535 540

Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu  
545 550 555 560

Val Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Phe  
565 570 575

Glu His His Tyr Lys Gly Ser Ser Arg Gly Arg Ser Lys Ser Ser Arg  
580 585 590

Phe Ser Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala  
595 600 605

Ser Ser Ser Ser Phe Ser Ser Ser Arg Ala Ser Ser Ser Arg Ser Gly  
610 615 620

Gly Gly Gly His Gly Gly Ser Arg Gly Phe Gly Gly Gly Gly Tyr Gly  
625 630 635 640

Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly  
645 650 655

Val Asp Trp Trp Gly Asn  
660

<210> 27

<211> 662

<212> PRT

<213> Homo sapiens

<400> 27

Met Ser His Val Ala Val Glu Asn Ala Leu Gly Leu Asp Gln Gln Phe  
 1 5 10 15  
 Ala Gly Leu Asp Leu Asn Ser Ser Asp Asn Gln Ser Gly Gly Ser Thr  
 20 25 30  
 Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Arg Glu Ala  
 35 40 45  
 Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser Gly Trp Ser Ser Ser Lys  
 50 55 60  
 Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Ser Asp Ser Arg Gly  
 65 70 75 80  
 Lys Ser Ser Phe Phe Ser Asp Arg Gly Ser Gly Ser Arg Gly Arg Phe  
 85 90 95  
 Asp Asp Arg Gly Arg Ser Asp Tyr Asp Gly Ile Gly Ser Arg Gly Asp  
 100 105 110  
 Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys  
 115 120 125  
 Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu  
 130 135 140  
 Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe  
 145 150 155 160  
 Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro  
 165 170 175  
 Pro His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met  
 180 185 190  
 Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys  
 195 200 205  
 His Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala  
 210 215 220  
 Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser  
 225 230 235 240  
 Gln Ile Tyr Ser Asp Gly Pro Gly Glu Ala Leu Arg Ala Met Lys Glu

245

250

255

Asn Gly Arg Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu  
 260 265 270

Ala Pro Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys  
 275 280 285

Phe Ser Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala  
 290 295 300

Asp Ile Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu  
 305 310 315 320

Val Ala Thr Pro Gly Arg Leu Val Asp Met Met Glu Arg Gly Lys Ile  
 325 330 335

Gly Leu Asp Phe Cys Lys Tyr Leu Val Leu Asp Glu Ala Asp Arg Met  
 340 345 350

Leu Asp Met Gly Phe Glu Pro Gln Ile Arg Arg Ile Val Glu Gln Asp  
 355 360 365

Thr Met Pro Pro Lys Gly Val Arg His Thr Met Met Phe Ser Ala Thr  
 370 375 380

Phe Pro Lys Glu Ile Gln Met Leu Ala Arg Asp Phe Leu Asp Glu Tyr  
 385 390 395 400

Ile Phe Leu Ala Val Gly Arg Val Gly Ser Thr Ser Glu Asn Ile Thr  
 405 410 415

Gln Lys Val Val Trp Val Glu Glu Ser Asp Lys Arg Ser Phe Leu Leu  
 420 425 430

Asp Leu Leu Asn Ala Thr Gly Lys Asp Ser Leu Thr Leu Val Phe Val  
 435 440 445

Glu Thr Lys Lys Gly Ala Asp Ser Leu Glu Asp Phe Leu Tyr His Glu  
 450 455 460

Gly Tyr Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg  
 465 470 475 480

Glu Glu Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val  
 485 490 495



Ala Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His  
500 505 510

Val Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg  
515 520 525

Ile Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe  
530 535 540

Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu  
545 550 555 560

Val Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Tyr  
565 570 575

Glu His His Tyr Lys Gly Ser Ser Arg Gly Arg Ser Lys Ser Ser Arg  
580 585 590

Phe Ser Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala  
595 600 605

Ser Ser Ser Ser Phe Ser Ser Ser Arg Ala Ser Ser Ser Arg Ser Gly  
610 615 620

Gly Gly Gly His Gly Ser Ser Arg Gly Phe Gly Gly Gly Gly Tyr Gly  
625 630 635 640

Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly  
645 650 655

Val Asp Trp Trp Gly Asn  
660

<210> 28

<211> 697

<212> PRT

<213> *Xenopus laevis*

<400> 28

Met Ser His Val Ala Val Glu Asn Val Leu Asn Leu Asp Gln Gln Phe  
1 5 10 15

Ala Gly Leu Asp Leu Asn Ser Ala Asp Ala Glu Ser Gly Val Ala Gly  
20 25 30

Thr Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Lys Glu Ala Ser  
 35 40 45

Arg Asn Asp Ser Asn Trp Asp Ser Gly Arg Gly Gly Asn Gly Tyr Ile  
 50 55 60

Asn Gly Met Gln Asp Asp Arg Asp Gly Arg Met Asn Gly Tyr Asp Arg  
 65 70 75 80

Gly Gly Tyr Gly Ser Arg Gly Thr Gly Arg Ser Asp Arg Gly Phe Tyr  
 85 90 95

Asp Arg Glu Asn Ser Gly Trp Asn Ser Gly Arg Asp Lys Asp Ala Tyr  
 100 105 110

Ser Ser Phe Gly Ser Arg Gly Asp Arg Gly Lys Gly Ser Leu Phe Asn  
 115 120 125

Glu Arg Gly Ser Gly Ser Arg Arg Thr Asp Asp Arg Arg Gln Asp Gly  
 130 135 140

Phe Asp Gly Met Gly Asn Arg Ser Asp Lys Ser Gly Phe Gly Arg Phe  
 145 150 155 160

Asp Arg Gly Asn Ser Arg Trp Ser Asp Asp Arg Asn Asp Glu Asp Asp  
 165 170 175

Trp Ser Lys Pro Leu Ala Pro Asn Asp Arg Val Glu Gln Glu Leu Phe  
 180 185 190

Ser Gly Ser Asn Thr Gly Ile Asn Phe Glu Lys Tyr Asp Asp Ile Pro  
 195 200 205

Val Glu Ala Thr Gly Ser Asn Cys Pro Pro His Ile Glu Ser Phe His  
 210 215 220

Asp Val Thr Met Gly Glu Ile Ile Met Gly Asn Ile Gln Leu Thr Arg  
 225 230 235 240

Tyr Thr Arg Pro Thr Pro Val Gln Lys His Ala Ile Pro Ile Ile Ile  
 245 250 255

Glu Lys Arg Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly Lys Thr  
 260 265 270

Ala Ala Phe Leu Leu Pro Ile Leu Ser Gln Ile Tyr Ala Asp Gly Pro

275

280

285

Gly Asp Ala Met Lys His Leu Gln Glu Asn Gly Arg Tyr Gly Arg Arg  
 290 295 300

Lys Gln Phe Pro Leu Ser Leu Val Leu Ala Pro Thr Arg Glu Leu Ala  
 305 310 315 320

Val Gln Ile Tyr Glu Glu Ala Arg Lys Phe Ala Tyr Arg Ser Arg Val  
 325 330 335

Arg Pro Cys Val Val Tyr Gly Gly Ala Asp Ile Gly Gln Gln Ile Arg  
 340 345 350

Asp Leu Glu Arg Gly Cys His Leu Leu Val Ala Thr Pro Gly Arg Leu  
 355 360 365

Val Asp Met Met Glu Arg Gly Lys Ile Gly Leu Asp Phe Cys Lys Tyr  
 370 375 380

Leu Val Leu Asp Glu Ala Asp Arg Met Leu Asp Met Gly Phe Glu Pro  
 385 390 395 400

Gln Ile Arg Arg Ile Val Glu Gln Asp Thr Met Pro Pro Lys Gly Val  
 405 410 415

Arg Gln Thr Met Met Phe Ser Ala Thr Phe Pro Lys Glu Ile Gln Ile  
 420 425 430

Leu Ala Arg Asp Phe Leu Asp Glu Tyr Ile Phe Leu Ala Val Gly Arg  
 435 440 445

Val Gly Ser Thr Ser Glu Asn Ile Thr Gln Lys Val Val Trp Val Glu  
 450 455 460

Glu Met Asp Lys Arg Ser Phe Leu Leu Asp Leu Leu Asn Ala Thr Gly  
 465 470 475 480

Lys Asp Ser Leu Thr Leu Val Phe Val Glu Thr Lys Lys Gly Ala Asp  
 485 490 495

Ala Leu Glu Asp Phe Leu Tyr His Glu Gly Tyr Ala Cys Thr Ser Ile  
 500 505 510

His Gly Asp Arg Ser Gln Arg Asp Arg Glu Glu Ala Leu His Gln Phe  
 515 520 525

Arg Ser Gly Lys Ser Pro Ile Leu Val Ala Thr Ala Val Ala Ala Arg  
530 535 540

Gly Leu Asp Ile Ser Asn Val Lys His Val Ile Asn Phe Asp Leu Pro  
545 550 555 560

Ser Asp Ile Glu Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Val  
565 570 575

Gly Asn Leu Gly Leu Ala Thr Ser Phe Phe Asn Glu Lys Asn Ile Asn  
580 585 590

Ile Thr Lys Asp Leu Leu Asp Leu Leu Val Glu Ala Lys Gln Glu Val  
595 600 605

Pro Ser Trp Leu Glu Asn Met Ala Tyr Glu Gln His His Lys Ser Ser  
610 615 620

Ser Arg Gly Arg Ser Lys Ser Arg Phe Ser Gly Gly Phe Gly Ala Lys  
625 630 635 640

Asp Tyr Arg Gln Ser Ser Gly Ala Gly Ser Ser Phe Gly Ser Ser Arg  
645 650 655

Gly Gly Arg Ser Ser Gly His Gly Gly Ser Arg Gly Phe Gly Gly Gly  
660 665 670

Tyr Gly Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Gly Gly  
675 680 685

Ser Ser Gln Val Asp Trp Trp Gly Asn  
690 695

<210> 29  
<211> 660  
<212> PRT  
<213> Mus musculus

<400> 29

Met Ser His Val Ala Glu Glu Asp Glu Leu Gly Leu Asp Gln Gln Leu  
1 5 10 15

Ala Gly Leu Asp Leu Thr Ser Arg Asp Ser Gln Ser Gly Gly Ser Thr  
20 25 30

Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Arg Glu Ala  
 35 40 45

Ala Lys Ala Phe Tyr Asp Lys Asp Gly Ser Arg Trp Ser Lys Asp Lys  
 50 55 60

Asp Ala Tyr Ser Ser Phe Gly Ser Arg Ser Asp Thr Arg Ala Lys Ser  
 65 70 75 80

Ser Phe Phe Ser Asp Arg Gly Gly Ser Gly Ser Arg Gly Arg Phe Asp  
 85 90 95

Glu Arg Gly Arg Ser Asp Tyr Glu Ser Val Gly Ser Arg Gly Gly Arg  
 100 105 110

Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys Asp  
 115 120 125

Lys Ala Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu Arg  
 130 135 140

Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe Glu  
 145 150 155 160

Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro Pro  
 165 170 175

His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met Gly  
 180 185 190

Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys His  
 195 200 205

Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala Gln  
 210 215 220

Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser Gln  
 225 230 235 240

Ile Tyr Thr Asp Gly Pro Gly Glu Ala Leu Arg Ala Met Lys Glu Asn  
 245 250 255

Gly Lys Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu Ala  
 260 265 270

Pro Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys Phe

275	280	285
Ser Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala Asp		
290	295	300
Ile Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu Val		
305	310	315 320
Ala Thr Pro Gly Arg Leu Val Asp Met Met Glu Arg Gly Lys Ile Gly		
	325	330 335
Leu Asp Phe Cys Lys Tyr Leu Val Leu Asp Glu Ala Asp Arg Met Leu		
	340	345 350
Asp Met Gly Phe Glu Pro Gln Ile Arg Arg Ile Val Glu Gln Asp Thr		
	355	360 365
Met Pro Pro Lys Gly Val Arg His Thr Met Met Phe Ser Ala Thr Phe		
	370	375 380
Pro Lys Glu Ile Gln Met Leu Ala Arg Asp Phe Leu Asp Glu Tyr Ile		
385	390	395 400
Phe Leu Ala Val Gly Arg Val Gly Ser Thr Ser Glu Asn Ile Thr Gln		
	405	410 415
Lys Val Val Trp Val Glu Glu Ala Asp Lys Arg Ser Phe Leu Leu Asp		
	420	425 430
Leu Leu Asn Ala Thr Gly Lys Asp Ser Leu Ile Leu Val Phe Val Glu		
	435	440 445
Thr Lys Lys Gly Ala Asp Ser Leu Glu Asp Phe Leu Tyr His Glu Gly		
	450	455 460
Tyr Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg Glu		
465	470	475 480
Glu Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val Ala		
	485	490 495
Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His Val		
	500	505 510
Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg Ile		
	515	520 525

Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe Phe  
530 535 540

Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu Val  
545 550 555 560

Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Phe Glu  
565 570 575

His His Tyr Lys Gly Gly Ser Arg Gly Arg Ser Lys Ser Arg Phe Ser  
580 585 590

Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala Ser Ser  
595 600 605

Ser Ser Phe Ser Ser Gly Arg Ala Ser Asn Ser Arg Ser Gly Gly Gly  
610 615 620

Ser His Gly Ser Ser Arg Gly Phe Gly Gly Gly Ser Tyr Gly Gly Phe  
625 630 635 640

Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Ser Ser Gln Gly Val Asp  
645 650 655

Trp Trp Gly Asn  
660

<210> 30  
<211> 660  
<212> PRT  
<213> Homo sapiens

<400> 30

Met Ser His Val Val Val Lys Asn Asp Pro Glu Leu Asp Gln Gln Leu  
1 5 10 15

Ala Asn Leu Asp Leu Asn Ser Glu Lys Gln Ser Gly Gly Ala Ser Thr  
20 25 30

Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Lys Glu Ala  
35 40 45

Ser Lys Gly Phe His Asp Lys Asp Ser Ser Gly Trp Ser Cys Ser Lys  
50 55 60

Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Asp Ser Arg Gly Lys  
 65 70 75 80

Pro Gly Tyr Phe Ser Glu Arg Gly Ser Gly Ser Arg Gly Arg Phe Asp  
 85 90 95

Asp Arg Gly Arg Ser Asp Tyr Asp Gly Ile Gly Asn Arg Glu Arg Pro  
 100 105 110

Gly Phe Gly Arg Phe Glu Arg Ser Gly His Ser Arg Trp Cys Asp Lys  
 115 120 125

Ser Val Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu Arg Leu  
 130 135 140

Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe Glu Lys  
 145 150 155 160

Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Ser Asn Cys Pro Pro His  
 165 170 175

Ile Glu Asn Phe Ser Asp Ile Asp Met Gly Glu Ile Ile Met Gly Asn  
 180 185 190

Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys His Ala  
 195 200 205

Ile Pro Ile Ile Lys Gly Lys Arg Asp Leu Val Ala Cys Ala Gln Thr  
 210 215 220

Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser Gln Ile  
 225 230 235 240

Tyr Thr Asp Gly Pro Gly Glu Ala Leu Lys Ala Val Lys Glu Asn Gly  
 245 250 255

Arg Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu Ala Pro  
 260 265 270

Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys Phe Ser  
 275 280 285

Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala Asp Ile  
 290 295 300

Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu Val Ala



305		310		315		320
Thr Pro Gly Arg	Leu Val Asp Met Met	Glu Arg Gly Lys Ile Gly Leu				
	325		330			335
Asp Phe Cys Lys Tyr Leu Val Leu Asp Glu Ala Asp Arg Met Leu Asp						
	340		345			350
Met Gly Phe Glu Pro Gln Ile Arg Arg Ile Val Glu Gln Asp Thr Met						
	355		360			365
Pro Pro Lys Gly Val Arg His Thr Met Met Phe Ser Ala Thr Phe Pro						
	370		375			380
Lys Glu Ile Gln Met Leu Ala Arg Asp Phe Leu Asp Glu Tyr Ile Phe						
	385		390			395
Leu Ala Val Gly Arg Val Gly Ser Thr Ser Glu Asn Ile Thr Gln Lys						
		405		410		415
Val Val Trp Val Glu Asp Leu Asp Lys Arg Ser Phe Leu Leu Asp Ile						
	420		425			430
Leu Gly Ala Thr Gly Ser Asp Ser Leu Thr Leu Val Phe Val Glu Thr						
	435		440			445
Lys Lys Gly Ala Asp Ser Leu Glu Asp Phe Leu Tyr His Glu Gly Tyr						
	450		455			460
Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg Glu Glu						
	465		470			475
Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val Ala Thr						
		485		490		495
Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Arg His Val Ile						
		500		505		510
Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg Ile Gly						
	515		520			525
Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe Phe Asn						
	530		535			540
Glu Lys Asn Met Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu Val Glu						
	545		550			555
						560

Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Tyr Glu His  
565 570 575

His Tyr Lys Gly Gly Ser Arg Gly Arg Ser Lys Ser Asn Arg Phe Ser  
580 585 590

Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ser Ser Ser  
595 600 605

Ser Gly Phe Gly Ala Ser Arg Gly Ser Ser Ser Arg Ser Gly Gly Gly  
610 615 620

Gly Tyr Gly Asp Ser Arg Gly Phe Gly Gly Gly Tyr Gly Gly Phe  
625 630 635 640

Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly Val Asp  
645 650 655

Trp Trp Gly Asn  
660

<210> 31  
<211> 482  
<212> DNA  
<213> Homo sapiens

<400> 31  
gagaacttga agccaccatg ggagatgaag attgggaagc agaaatcaac cctcatatgt 60  
cttcctatgt tcccatatgt gagaaggata ggtattcttg agaaaatgga gacaatttta 120  
acaggactcc agcttcatca tcagaaatgg atgatggacc ttctcgaaga gatcatttca 180  
tgaaaagtgg atttgccctc gggcggaatt ttggaacag agatgctggt gagtgtaata 240  
agcgagataa tacatccaca atgggtggtt ttggagttgg aaagagtttt ggaaacagag 300  
gtttttcaaa cagcagggtt gaagatggtg atagctcttg tttctggaga gagtctagta 360  
atgactgcga agataatcca acacggaaca gaggggtttt caagaaaggc ggctatcgag 420  
atggaaataa ttcagaagct tcagggccat acagagaggt ggagaggtag ttttcogagg 480  
tg 482

<210> 32  
<211> 555  
<212> DNA  
<213> Homo sapiens

<400> 32

tttgacattt agaatgcttt aatattccca gttaacacca tttgtatcag taactgcaat	60
gttgtaagtt ttagcatctc acataactag tcagtaagga tttttttttt aagtgtagga	120
gtgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg ttaaaaactc	180
aaaaatcaaa actatttttct tctctgcac aaaaccacag acttgaagga tgttttggct	240
ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa acccagctgt	300
gttcaaagtg ctcttgccct ttctggatc aactgatgca aacacgtttc ctcttgact	360
accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg caggaacatc	420
ctgttgagca tctgtcaata cttttactag aggctgtgct aaatggttat ccgattcaag	480
atcaaaaaag gaaattgctc tgccagtatt cccacaacga ccagtagcc caattcgatg	540
aacatattca tcaat	555

<210> 33  
 <211> 491  
 <212> DNA  
 <213> Homo sapiens

<400> 33	
attgatgaat atgttcatcg aattgggcgt actggtcgtt gtggaatac tggcagacaa	60
tttccttttt tgatcttgaa tcggataacc atttagcaca gcctctagta aaagtattga	120
cagatgctca acaggatgtt cctgcatggc tggaagaaat tgcctttagt acatacatc	180
ctggcttcag tggtagtaca agaggaaacg tgtttgcac agttgatacc agaaagggca	240
agagcacttt gaacacagct gggttttctt cttcacaagc tccaatcca gtagatgatg	300
agtcatggga ttaaagccaa aacatccttc aagtctgtgg ttttgatgca gagaagaaaa	360
tagttttgat ttttgagttt ttaacagaag tataaaactt aacattctca tagctcctgt	420
ccttgatttc tcaactctac acttaaaaaa aaaatcctta ctgactagtt atgtgagatg	480
ctaaaactta c	491

<210> 34  
 <211> 335  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (201)..(202)  
 <223> n is a, c, g, or t

<400> 34	
ttatatatgg gggaaccacg ctgggacatt caattcgaca aatagtacaa ggctgtaata	60
tattatgtgc tactcctgga agactgatgg atatcatagg caaagaaaag attggtctca	120

aacagatcaa atacttagtt ttggatgaag ctgatcgcat gttggatatg ggttttggtc	180
cagaaatgaa gaagttaatt nnttgcccag gaatgccatc aaaggaacag cgccaaaccc	240
ttatgttcag tgcaactttt ccagaggaaa ttcaaagggt ggctgcagag tttttaaagt	300
caaattatct gtttgttgct gttggacaag tgggt	335

<210> 35  
 <211> 555  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (546)..(546)  
 <223> n is a, c, g, or t

<400> 35	
tttttttttt tttttttttt ttttgacatt taaaatgctt taatattccc agttaacacc	60
atttgatatca gtaactgcaa tgttgtaagt tttagcatct cacataacta gtcagtaagg	120
attttttttt taagtgtagg agtgagaata caaggacagg agctatgaga atgttaagtt	180
ttatacttct gttaaaaact caaaaatcaa aactattttc ttctctgcat caaaaccaca	240
gacttgaagg atgttttggc tttaatccca tgactcatca tctactggat tgggagcttg	300
tgaagaagaa aaccagctg tgttcaaagt gctcttgccc tttctggtat caactgatgc	360
aaacacgttt cctctgttac taccactgaa gccaggaatg tatgtactaa aggcaatttc	420
ttccaaccat gcaggaacat cctgttgagc atctgtcaat acttttacta gaggctgtgc	480
taaatggtta tccgattcaa gatcaaaaaa ggaaattgct ctgccagtat toccacaacg	540
accagnacgc ccaat	555

<210> 36  
 <211> 347  
 <212> DNA  
 <213> Homo sapiens

<400> 36	
tttttttttt atgagaatgt taagttttat acttctgtta aaaactcaaa aatcaaaaact	60
attttcttct ctgcatcaaa accacagact tgaaggatgt tttggcttta atcccatgac	120
tcatcatcta ctggattggg agcttgtgaa gaagaaaacc cagctgtggt caaagtgctc	180
ttgccctttc tggatatcaac tgatgcaaac acgtttcctc ttgtactacc actgaagcca	240
ggaatgtatg tactaaaggc aatttcttcc aaccatgcag gaacatcctg ttgagcatct	300
gtcaataactt ttactagagg ctgtgctaaa tggttatccg attcaag	347

<210> 37  
<211> 469  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (341)..(341)  
<223> n i s a, c, g, o r t

<400> 37  
ttttgacatt tagaatgctt taatattccc agttaacacc atttgtatca gtaactgcaa 60  
tggttgtaagt ttttagcatct cacataacta gtcagtaagg attttttttt taagtgtagg 120  
agtgagaata caaggacagg agctatgaga atgttaagtt ttatacttct gttaaaaact 180  
caaaaatcaa aactattttc ttctctgcat caaaaccaca gacttgaagg atgttttggc 240  
tttaatccca tgactcatca tctactggat tgggagcttg tgaagaagaa aaccagctg 300  
tgttcaaagt gctcttgccc ttcttgatc aactgatgca naaccgtttc ctcttgact 360  
accactgaag ccaggaatgt tgtactaaag gcaatttctt ccaaccatgc aggaacatcc 420  
tgttgagcat ctgtcaatac ttactagaa gctgtgctaa atggttatac 469

<210> 38  
<211> 300  
<212> DNA  
<213> Homo sapiens

<400> 38  
aagtgtagggt ttgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg 60  
ttaaaaaactc aaaaatcaaa actattttct ttctctgcatc aaaaccacag acttgaagga 120  
tgttttggct ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa 180  
accagctgtg gttcaaagtg ctcttgccct ttctggatc aactgatgca aacacgtttc 240  
ctcttgact accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg 300

<210> 39  
<211> 300  
<212> DNA  
<213> Homo sapiens

<400> 39  
aagtgtagga gtgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg 60  
ttaaaaaactc aaaaatcaaa actattttct ttctctgcatc aaaaccacag acttgaagga 120  
tgttttggct ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa 180  
accagctgtg gttcaaagtg ctcttgccct ttctggatc aactgatgca aacacgtttc 240

ctcttgact accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg 300

<210> 40  
<211> 371  
<212> DNA  
<213> Homo sapiens

<400> 40  
tttttttttt tttttttttt tttttttttt ttgacattta gaatgcttta atattcccag 60  
ttaacaccat ttgtatcagt aactgcaatg ttgtaagttt tagcatctca cataactagt 120  
cagtaaggat ttttttttta agtgtaggag tgagaatata aggacaggag ctatgagaat 180  
gttaagtttt atactttctgt taaaaactca aaaatcaaaa ctattttctt ctctgcatca 240  
aaaccacaga cttgaaggat gttttggctt taatcccatg actcatcatc tactggattg 300  
ggagcttggtg aagaagaaaa ccagctgtg ttcaaagtgc tcttgccctt tctggatatca 360  
actgatgcaa a 371

<210> 41  
<211> 108  
<212> DNA  
<213> Homo sapiens

<400> 41  
gaatgtatgt actaaaggca atttcttcca accatgcagg aacatcctgt tgagcatctg 60  
tcaatacttt tactagaggc tgtgctaaat gggtatccga ttcaagat 108

<210> 42  
<211> 103  
<212> DNA  
<213> Homo sapiens

<400> 42  
gaatgtatgt actataggca atttcttcca tccatgctgg aacatcctgt tgagcatctg 60  
tcaatacttt tactagaggc tgtgctacat ggctaaccga atc 103

<210> 43  
<211> 100  
<212> DNA  
<213> Homo sapiens

<400> 43  
gaatgtatgt actaaaggca atttcttcca accatgcagt gacatcatgt tgagcatctg 60  
tcaatacttt tactagatgc tgtctataat aggtatcggg 100

<210> 44  
<211> 79  
<212> DNA  
<213> Homo sapiens

<400> 44  
 ttctaccatt gatgaatatg ttcacgcact tgggcgtact ggtcgttggt ggaatactgg 60  
 cagagcaagt ttccttttt 79

<210> 45  
 <211> 471  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
 gaaagattgg attagacttt tgcaaatact tgggtgttaga tgaagctgat cggatgttgg 60  
 atatgggggtt tgagcctcag attcgttagaa tagtcgaaca agatactatg cctccaaagg 120  
 gtgtccgcca cactatgatg tttagtgtta cttttcctaa ggaaatacag atgtctggctc 180  
 gtgatttctt agatgaatat atcttcttgg ctgtaggaag agttggctct acctctgaaa 240  
 acatcacaca gaaagtagtt tgggtggaag aatcagacaa acggtcattt ctgcttgacc 300  
 tctaaatgc aacaggcaag gattcactga ccttagtggt tgtggagacc aaaaagggtg 360  
 cagattctct ggaggatttc ttataccatg aaggatacgc atgtaccagc atccatggag 420  
 accgttctca gagggataga gaagaggccc ttcaacagtt ccgctcaggg a 471

<210> 46  
 <211> 381  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (264)..(264)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (336)..(336)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (378)..(378)  
 <223> n is a, c, g, or t

<400> 46  
 ttttgcaaact acttgggtgtt agatgaagct gatcggatgt tggatatggg gtttgagcct 60  
 cagattcgtga gaatagtcga acaagatact atgcctccaa aggggtgtccg ccacactatg 120  
 atgttttagtg ctacttttcc taaggaaata cagatgctgg ctcgtgattt cttaggatga 180  
 atatatcttc ttgggctgta gggaaggagt tgggctctac ctctggaaaa catcacacag 240  
 gaaagtagtt ggggtgggaa ggantcagga caaacgggtc atttctgggt tgaccctccc 300

taaatggcaa caggggcaag ggatttcact tgacnttag gtgtttgtg ggggagaccc	360
caaaaggggg tgccaggntt c	381

<210> 47  
 <211> 361  
 <212> DNA  
 <213> Homo sapiens

<400> 47	
ttttgcaaat acttggtgtt agatgaagct gatcggatgt tggatatggg gtttgagcct	60
cagattcgta gaatagtcga acaagatact atgcctccaa aggggtgtccg ccacactatg	120
atgttttagtg ctacttttcc taaggaaata cagatgctgg ctcgatgattt cttagatgaa	180
tatatcttct tgggctgtag ggaagagttg gctctacctc tgaaaacatc acacagaaag	240
tagttggggt gggaaggaat cagacaaacg gtcatttctg gcttggacct cctaaatggc	300
aacagggcaa gggttcactt gaccttagtg ttttgttggg agacccaaaa aggggtgcca	360
g	361